



The European Institute for the PCB Community

## EIPC SPEeDNEWS

*The Weekly On-Line Newsletter*  
*Issue 6 – February 2023*

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### NEWS FROM TAIWAN

#### China eyes thwarting US chip curbs

Key members of China's most influential scientific body have outlined the nation's plan to circumvent US chip sanctions for the first time, codifying Beijing's view of how it could win a crucial technological conflict with Washington.

Two of the nation's senior academics wrote that Beijing should amass a portfolio of patents that govern the next generation of chipmaking, from novel materials to new techniques.

That should propel its semiconductor ambitions, while giving China the clout to push back against US sanctions designed to hamstring its semiconductor sector, Luo Junwei and Li Shushen wrote in the bulletin of the Chinese Academy of Sciences.

The article, published on a social media account affiliated with the academy, offers a rare glimpse into how Beijing thinks about and might react to the administration of US President Joe Biden's escalating hostilities over semiconductors. The academy advises China's top decision makers and the article echoes remarks by Chinese President Xi Jinping calling for victory in developing core technologies.

Washington has implemented a series of measures limiting exports of technology such as chipmaking equipment and artificial intelligence processors to China, part of a broader set of technology sanctions.

Intensive research of groundbreaking materials, components and manufacturing would help China's chip firms build a portfolio of patents covering critical technology — the sort of essential equipment and techniques that the US is now wielding as a weapon against China, the scientists wrote.

"We should vigorously promote the spirit of scientists who pursue originality and resist low-level, repetitive follow-up research," the scientists wrote.

Li is a semiconductor physics expert and a vice president of the academic institute, while Luo works at its chip research arm.

The two pointed to a number of practical challenges for the chip industry, including a talent shortage and a lack of funding in fundamental research.

The US has imposed a series of sanctions on China's technology industry, including blocks on companies perceived as national champions such as Semiconductor Manufacturing International Corp and Huawei Technologies Co .

Additional rules imposed over the past year also barred the world's biggest contract chipmakers such as Taiwan Semiconductor Manufacturing Co from making cutting-edge silicon for Chinese designers.

Washington is also said to have secured an agreement with the Netherlands and Japan to restrict exports of some advanced chipmaking machinery to China, further limiting Chinese companies' ability to advance technologically.

Chinese officials have refrained from discussing countermeasures, even in closed-door meetings.

China's new technology overseer last week outlined his vision for moving past US sanctions, stressing the need to modernize and rectify weak links in its supply chain.

In a lengthy column published by the Chinese Communist Party's main magazine, Chinese Minister of Industry and Information Technology Jin Zhuanglong called attention to how China occupies the lower and middle tiers of the global value chain and thus lacks the ability to master its fate.

It urgently needs to modernize and quicken development of critical technologies, and safeguard its ability to build everything from plastic toothbrushes to jumbo jets, Jin wrote.

That entails also staying ahead in sectors including new-energy vehicles, solar and mobile communications, where local players already enjoy an edge, Jin added.

[Taipei Times](#)



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### NEWS FROM ITALY

#### ***‘FOCUS ON PCB’ Fair***

***This will be held in Vicenza on 18<sup>TH</sup> and 19<sup>TH</sup> of May 2022 and it will be the only European Fair dedicated to the world of PCBs and PCBAs in its first edition***

Focus on PCB is an absolute debut in the European B2B exhibition scene and aims to fulfil the requirement of a meeting between PCB producers and distributors, contractors, EMS, material suppliers for PCB, service and design tools providers, PCB and PCBA accounting companies and institutions, testing and analysis laboratories.

It targets technicians, R&D managers and buyers from the industries that install PCB, in particular: medical, aerospace and military, automotive, railway, industrial sector, renewable energy and environmental systems, telecommunication and datacom, lighting, appliances and home automation, air conditioners and refrigerators, vending machines and video surveillance.

Focus on PCB will be hosted at the Vicenza Expo Centre, a modern ground that covers a usable area of 80.000m<sup>2</sup> and includes conference rooms, refreshment facilities, press and meeting rooms as well as an 8-level multi-storey car park. In addition to the exhibition area, the format includes a premium suite of conferences and forums with key industry players and experts that will delve deep into the features and potential of the PCB market.

The participation fee includes a 20-minute-speech upon slot availability and approval by the technical committee.

**Focus on PCB will take place on 2 days from Wednesday, 17<sup>th</sup> May to Thursday, 18th May 2023 at the Fiera di Vicenza, Viale della Oreficeria 16, 36100 Vicenza, Veneto, Italy.**

During the fair, conferences and forums will be organized with the main players and experts in the sector to analyse the characteristics and potential of a rapidly expanding market.

“Focus on PCB “ will therefore allow PCB users to have a complete picture of the Italian companies that produce PCBs and PCBAs that assemble them, in this way it will be possible to share know-how and innovative ideas useful to the entire sector.

Atg electronics will be present on Stand 208 in Hall 1 and will host the company LUMINOVO, creator of a latest generation software, able to obtain availability and price of components in real time.

Fair organiser  
Nürnberg Messe Italia Srl  
Via Renato Fucini, 5  
I-20133 Milan, Italy

[www.nuernbergmesse-italia.it](http://www.nuernbergmesse-italia.it)



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## NEWS FROM SWEDEN

**CONFIDEE is proud to announce their entrance as new member to FSI, the Norwegian Defence and Security Industry Directory.**

As FSI plays a vital role in bringing together leading defence industry organizations to collaborate and drive innovation in the defence sector, having strong members with thorough knowledge from all parts of the defence supply chain is crucial. Terje Nylund, FSI, is in such perspective, very pleased to welcome CONFIDEE, with their knowledge and experience to the organization.

“In today's globalised world, compliance with regulations and standards is crucial for companies operating within the defence sector. This is particularly true for those involved in the export of defence products and technologies, as strict regulations are in place to ensure that sensitive technologies do not fall into the wrong hands. CONFIDEE understands the importance of these regulations and is fully committed to ensuring that its business practices meet the highest standards of compliance”, says CEO Vidar Olsen.

### **To be the forefront of compliance**

Being part of FSI enables CONFIDEE to collaborate with other industry leaders, sharing knowledge and experience to help drive the industry forward.

“By staying up to date with the latest developments in defence industry regulations and standards and sharing our experience and knowledge within the industry, we continue to be at the forefront of compliance within the defence sector; by ensuring that we are always in line with the latest requirements, we can pass this knowledge down to protect our customers supply chains”, says Torger Edland, Sales Manager Norway for CONFIDEE.

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## NEWS FROM THE UK

### Supreme Court in UK Set to Weigh IP Rights for AI

By Ilene Wolff, EE Times

Artificial intelligence (AI) does a lot, and now its champions are asking governments to recognise it as a 21st-century inventor and author with intellectual property (IP) protection rights.

Next month, the United Kingdom's Supreme Court is set to consider the issue of whether AI can be indicated as an inventor on a patent application, in the case of physicist Stephen Thaler and his Creativity Machine, his lead attorney, Ryan Abbott, told EE Times. A request for the U.S. Supreme Court to take a separate case on the same issue is pending, he added.

AI-as-inventor of a patentable creation is the issue in a worldwide effort by Abbott and a team of lawyers in the [Artificial Inventor Project](#) (AIP).

"AIP ... is intended to promote dialogue about the social, economic, and legal impact of frontier technologies, such as AI, and to generate stakeholder guidance on the protectability of AI-generated output," according to the project's website.

The AI may be creating new works that need IP protection, but there's one inventor function it can't fulfil.

In some instances, the inventor can play a compelling role in the government's review process of a patent application, Pad Alce, founding partner of the [AI Patent Law](#) firm, told EE Times. The firm focuses on patent portfolios for start-ups and high-growth companies.

"If you've ever participated in an exam or interview, the most convincing are oftentimes when the inventor is present and able to delineate the distinction between the current invention that we are attempting to prosecute and the prior art of record (a previously patented invention)," he said. "It often can present a compelling story, when the inventor is saying, 'These are the issues I struggled with

when coming up with this invention. And here's how I came up with the technical solution'."

For the Creativity Machine's inventions, project attorneys filed patent applications in 18 jurisdictions around the world on two inventions—neural flame, an emergency beacon, and fractal container, a beverage holder based on fractal geometry—and listed Thaler's neural network-based Creativity Machine as the inventor, said Abbott, who is a professor of Law and Health Sciences at the University of Surrey School of Law and adjunct assistant professor of Medicine at the David Geffen School of Medicine at University of California, Los Angeles.

The physicist also applied for a copyright on "A Recent Entrance to Paradise," an art piece generated by the Creativity Machine, and it was denied. Abbott asked a court in January to order the U.S. Copyright Office to reverse its denial, and the government filed paperwork in response asking the court to uphold its position. A decision may not be made until next year.

For the fractal container and neural flame, the U.S. Patent and Trademark Office rejected the application for patents and said an inventor must be a "natural person." After unsuccessful lower-court appeals, Abbott petitioned the U.S. Supreme Court.

Early next month, he is set to head to London, to argue Thaler's patent case before the U.K.'s highest court.

To date, the patent applications have only been subject to final, non-appealable outcomes in two jurisdictions: Australia, where the patents have been denied, and South Africa, where the patents have been granted. In Germany, New Zealand and Taiwan, the applications are also in the process of judicial appeals after having been denied by patent offices, according to a summary written by Abbott and attorney Elizabeth Rothman.

In the remaining jurisdictions, the applications either have yet to be examined or have been subject to preliminary rejections by patent offices that are still being internally appealed.

At stake is legal protection for an inventor's work, safeguards that encourage innovation and assure creators that without their permission their work can't be taken and used for another's benefit. This protection for inventors and authors is rooted in the U.S. Constitution.

Abbott pulled an example from the pharmaceutical industry to illustrate his point.

"When COVID hit, they told all their pharmacologists to stop whatever they were working on and go work on COVID," he said. "In the future, they may go to a room full of supercomputers and computer scientists and say, 'Have AI sequence this new pathogen, design an antibody to treat it, design clinical trials and formulate it.' And if AI can automate some or all of that work, that's something that we really want to encourage.

“If it is that AI can be used to more effectively design new drugs or repurpose existing drugs, you wouldn’t want companies avoiding doing that simply because they need patents and not automating processes that are susceptible to automation. It would make pharmaceutical development less effective.”

### **Let the data decide**

Joe Mutschelknaus, a partner in the law firm [Sterne, Kessler, Goldstein & Fox](#), told EE Times he thinks companies are, for the most part, listing the engineers of AI systems as inventors for the solutions their software is devising.

“As these AI systems have been advancing, for example with the next-generation ChatGPT, they’re getting better and better, and the creative work required of humans is less and less,” he said. “And so there might be a threshold where there is no invention. That’s something that Congress and the courts are going to have to figure out.”

Mutschelknaus sees another way. “My personal opinion is that maybe there should be some other disclosure requirement of how the invention was made,” he said.

Ben Stasa, a lawyer who specializes in electrical, computer and software patent prosecution at the IP law firm [Brooks Kushman P.C.](#), sees a social experiment going on with the Thaler case. He wants to see more data to determine the best course.

“I think it would be interesting to see different courts, different jurisdictions do different things—so that some experimentation can take place to see what type of behaviours and results the laws give in certain jurisdictions,” Stasa said. “What, you know, is the best balance?”

### **Intellectual exercise becomes real**

The relevant U.S. regulators are paying attention to the issue.

Shira Perlmutter, director of the U.S. Copyright Office, told [Bloomberg Law](#) that this year her office is focusing on “legal gray areas” about copyright and AI amid increasing concerns that policy is lagging behind the technology.

“When we started looking at it, it was a very interesting intellectual exercise primarily, and now it’s become very real,” she told the legal publication.

The U.S. Patent and Trademark Office has an ongoing [AI and Emerging Technologies Partnership](#) series that will soon issue a Request for Comment on AI technologies and inventorship issues, Paul Fucito, USPTO press secretary, told EE Times.

Those comments will reach Fucito’s boss, Kathi Vidal, director of the USPTO, who’s very familiar with AI. She began her career as a systems and software design engineer with General Electric and Lockheed Martin, where she designed one of the

first AI systems for aircraft, according to a [press release](#) announcing her appointment last April.

Ilene Wolff

*Ilene Wolff is a freelance reporter with long experience covering technology and engineering. She has contributed to a variety of publications, including Smart Manufacturing magazine, Manufacturing Engineering magazine, the Ann Arbor Observer, DBusiness magazine and Crain's Detroit Business.*

## **MicroTech 2023 - Advanced Packaging and Technology Trends**

**Thursday 30 March 2023 at University of Strathclyde, Glasgow**

Keynote Presentations on Advanced Prototype IC packaging and Plastic encapsulation

Advanced Affordable ASAP - Prototyping IC Packaging Requirement for the Post Wirebond Age by Silicon Contact

Plastic Encapsulation for Harsh Environments by Alter Technology

These Keynote Presentations are supported by a series of other presentations throughout the day, including:

Packaging Challenges in Quantum Technologies by Bay Photonics

High Power and Highly Integrated Microwave and mmWave packaging by Filtronic

AI and Microelectronic Reliability by MCS Group

Novel Form Factors and Encapsulation in Healthcare Electronics by CPI

Power Electronic Packaging by Panda Europe

Deposition of Fine Pitch Indium Bumps for Radiation Detectors by STFC

Sustainable Silver Circuitry and Sensor Production by the University of Dundee

Laser Assisted Die Bonding by Heriot Watt University

Highly Conductive Micropaths by AMU

MicroTech 2023 is sponsored by Alter Technology UK, who are also offering the opportunity to visit their site in Livingston on the afternoon of Wednesday 29th March 2023. Current exhibitors include: Accelonix, Gen3, DISCO Hi-Tech Europe and Inseto (UK) Ltd.

The MicroTech 2023 Conference is preceded by a PEPTUS (Power Electronics Packaging Training and Upskilling) Workshop on the afternoon of Wednesday 29th March at the same location, focusing on Materials and Processes.

For Any other details or information Please contact:

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## Issue 6 – February 2023

### NEWS FROM THE TPCA

#### **Taiwan's listed PCB revenue in January, down 1.15% monthly and 28.14% year-on-year; PCB demand in two fields heating up from Q2 - TPCA**

February 20, 2023

TPCA

Taiwan Board Association (TPCA) statistics on listed PCB revenue in January, down 1.15% monthly and 28.14% year-on-year. The legal person said that mainly due to the impact of the traditional off-season and the reduction of working days, looking ahead, although the market situation in the first half of the year is still weak, but optimistic about the new platform benefits of servers and automotive-related demand is still strong, it is expected that PCB demand in these two areas is expected to gradually increase from the second quarter.

TPCA statistics show that the revenue of hard board/carrier board in January decreased by 99.1% month-on-month and 12.26% year-on-year, and the monthly decrease of flex board decreased by 21.82%, with an annual increase of 21.51%. Because consumer electronics demand has not yet recovered, working days have been greatly reduced, and BT carrier boards are also affected by market fluctuations, only ABF carrier boards are relatively supported, so hard board factories, carrier board factories generally declined, although flexible board factories are also affected by off-season and working days interference, but the US mobile phone manufacturers got rid of the epidemic interference at the end of last year, and the momentum of pulling goods continued, bringing support to some flexible board factories.

The market situation reversed in 6, the first half of 56 is still conservative, the market is generally expected to recover slowly until the third quarter or the second half of the year, many terminal applications, servers are more stable than other electronic products, although the economic downturn still has the possibility of impacting enterprises to reduce capital expenditure, but 2022G,

AI, HPC, cloud, data centers and other trends remain unchanged, related network infrastructure demand is still there, server-related supply chain operators are still optimistic about growth compared with last year.

Server PCB supply chain such as board factory Jinxi Electric, Bozhi, Zhending-KY, Jianding, ABF carrier board factory Nandian, Xinxing, Jingshuo, upstream high-frequency and high-speed materials related such as copper foil factory Jinju, CCL supplier Taiwan Optoelectronics, Lianmao, etc.

In terms of automotive plates, from the bottom of the previous years, to the later stabilization of demand but the supply chain continued to be unsmooth, on the whole, automotive demand is not a problem, but the supply chain bottleneck is not a small challenge.

Despite the unsmooth automotive supply chain last year, various automotive steel factories continue to actively strive for new customers and new products, and with the gradual emergence of benefits in 2023, supply chain bottlenecks have also eased after the lifting of the lockdown. Related board factories such as Jianding, Taiding Jingpeng, Yihua, Dingying Investment Control, etc., are among the beneficiaries. (News source: Wangdefu)

## **China's PCB output value grew strongly in 202, with the output value reaching 511.66 billion US dollars, a year-on-year increase of 28.4% - TPCA**

February 21, 2023

TPCA

From 2017 to 2021, the overall scale of China's PCB output value showed a gradual upward trend, and the growth rate fluctuated significantly. In 2021, due to the recovery of demand, the upgrading of technical requirements and the sharp rise in raw material prices, China's PCB output value grew strongly, with the output value reaching 511.66 billion US dollars, a year-on-year increase of 28.4%.

Supply structure - standard multilayer board output value accounts for half of the country From the perspective of the output value of each market segment, the main products of China's printed circuit board segment include standard multilayer board, HDI board, rigid single and double layer board, flexible board. In 2021, the output value of the above products accounted for 49%, 18%, 14% and 14% respectively, while the output value of high-value IC carrier boards accounted for 4% and the output value of rigid-flex boards accounted for only 1%.

Demand structure - communications, computers, automotive fields in the top three The current PCB has been an indispensable accessory for electronic

equipment, according to the existing application fields of the category, communications, computers, consumer electronics, medical devices, automotive electronics, aerospace, industrial electronics and other seven categories, in 2021 the top three are communications, computers and commercial equipment, automobiles, accounting for 31.5%, 27%, 16% respectively. From the trend point of view, the field of computers and commercial equipment will grow faster in 2021, mainly due to the increase in demand for commercial equipment with the construction of new infrastructure such as data centers; The demand in the field of communication has declined, mainly due to the pressure on consumption, resulting in a decline in demand for mobile phone products. Compared with the global structure, the PCB demand in China's automotive field is significantly higher than the global average.

Prospect forecast - China's PCB output value will further growth, in the medium and long term, the future global PCB industry will still show a growth trend, and China will continue to maintain the industry's leading manufacturing center position, Prisma predicts that the compound growth rate of China's PCB output value from 2021 to 2026 is about 4.6%. On the basis of Prisma's forecast, combined with the market development of China's PCB industry in the downstream major markets such as the communication market, computer market, automotive market, consumer electronics and other industries, it is expected that China's PCB output value will reach about 2027.678 billion US dollars by 2022, with a compound growth rate of about 2027.4% from 8 to <>. (News source: PCB Information)



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## International Diary

### 2023

#### **21<sup>st</sup> EIPC Technical Snapshot Webinar**

Registrations via [www.eipc.org](http://www.eipc.org)

April

#### **EIPC @ SMTconnect**

9-11 May

Nuremberg, Germany

#### **EIPC Summer Conference**

15 & 16 June

Germany

#### **22<sup>nd</sup> EIPC Technical Snapshot Webinar**

Registrations via [www.eipc.org](http://www.eipc.org)

September

#### **23<sup>rd</sup> EIPC Technical Snapshot Webinar**

Registrations via [www.eipc.org](http://www.eipc.org)

October

#### **EIPC @ Productronica 2023**

14-17 November

München, Germany

#### **24<sup>th</sup> EIPC Technical Snapshot Webinar**

Registrations via [www.eipc.org](http://www.eipc.org)

December